UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/196,680	11/20/1998	STEPHEN J. MEYER	16114:E (-003US)	9428

60708 7590 05/28/2008

FOR: TYCO FIRE & BUILDING PRODUCTS
PROSKAUER ROSE LLP
1001 Pennsylvania Avenue, NW
Suite 400 South
Washington, DC 20004-2533

EXAMINER	
KIM, CHRISTOPHER S	

ART UNIT	PAPER NUMBER
3752	

MAIL DATE	DELIVERY MODE
05/28/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/196,680	MEYER ET AL.	
	Examiner	Art Unit	
	Christopher S. Kim	3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,14,15 and 20-74* is/are pending in the application.

4a) Of the above claim(s) *55-61* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,14,15,20-54 and 62-74* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The response filed February 15, 2008 is acknowledged.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 1-11, 14, 15, 20-41, 46-54, 63-74 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 64 recites a means for transforming and delivering which appears to invoke means plus function under 35 U.S.C. 112, six paragraph. The means plus function defines a dual function, one of which requires elements and/or function beyond the deflector, i.e., the average density of 0.15 gallons per minute per square feet is also dependent on the flow rate and pressure of the water provided to the sprinkler and deflector. The disclosure, as originally filed, fails to teach a structure which performs the dual function. See MPEP 2181.II.

Claims 67 and 72-73 recite "…the deflector includes a face portion…the face portion consisting of a single flow opening…" The disclosure, as originally filed,

discloses the face portion having several flow openings. The flow deflector has a face portion having several radial slots/openings between the tines of face portion 42 which permits fluid flow.

4. Claims 64-74 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 64 recites a means for transforming and delivering which appears to invoke means plus function under 35 U.S.C. 112, six paragraph. The means plus function defines dual function, one of which requires elements and/or function beyond the deflector, i.e., the average density of 0.15 gallons per minute per square feet is also dependent on the flow rate and pressure of the water provided to the sprinkler and deflector. The metes and bounds of the claimed invention cannot be determined because the specification does not disclose a structure which performs the dual function. See MPEP 2181.II.

Claim Rejections - 35 USC § 103

5. Claims 1-11, 14, 15, 20-54, 62 and 64-74 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (4,296,816) in view of Tramm (5,810,263).

Fischer discloses a sprinkler comprising: a generally tubular body 30 having a central passageway 31, a closure 40, a trigger 44, a deflector 38; a face portion 76; a canopy portion 62; two frame arms 34; two support arms (no reference numbers); a

single flow opening 79. Fischer teaches the use of a deflector 38 shaped and positioned to transform a horizontal flow of water into a spray pattern of droplets dispersed over a generally horizontal, rectangularly-shaped coverage area (see figures 1 and 6). The coverage area may be up to 16 ft x 24 ft (see column 3 lines 55-58).

Fischer discloses, in column 4, lines 33-37, canopy 62 was tested with: channel 90; channel 90 removed; and entire canopy 62 flat. Fischer discloses that with channel 90 cut away along boundary 95, "the sprinkler performed much the same as it did with no channel and an entirely flat confining element."

Tramm discloses, in column 5, lines 12-14, a horizontal-type fire protection sprinkler having a K-factor of at least 3.5, or at least 5.0, or at least 7.0, or at least 10.5, or at least 13.0. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the range of K-factors (greater than 9) as taught by Tramm to provide a specific flow rate depending on pressure.

The device of Fischer in view of Tramm discloses the claimed limitation with the exception of the water flow rate and coverage area being at a height of only three feet below the canopy portion of the deflector. Fischer in view of Tramm discloses the structural limitations, K-factors including the relationship between flow rates and pressures, and the coverage area. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have positioned the sprinkler of Fischer in view of Tramm three feet above the coverage area to extinguish fires in three feet high compartments.

Fischer discloses the limitations of the claimed invention with the exception of the liquid filled glass bulb. Tramm discloses, pictorially, in figure 2, a liquid filled glass bulb 20. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have replaced the trigger of Fischer with the trigger (liquid filled glass bulb) of Tramm to eliminate the need for solder.

Fischer discloses, in column 3, lines 55-58, a coverage area of 16 ft x 24 ft (using a deflector comprising a generally planar face portion and a canopy portion, see figure 2). It would have been obvious to a person of ordinary skill in the art at the time the invention was made that the coverage area is dependent on the fluid pressure, and therefore, any coverage area less than 16 ft x 24 ft can be attained by reducing the pressure (or increasing the K-factor which results in a lower pressure as defined by the formula in column 5, lines 30-38 of Tramm). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have adjusted the coverage area depending on the size of the room, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

The functional recitation "…and when the sidewall fire sprinkler is paired with an identical sidewall fire sprinkler mounted approximately sixteen feet apart on a generally planar wall surface with a collection area of approximately sixteen feet between the sprinklers and sixteen feet away from one of the sprinklers, the collection area located at either one of a distance of about thirty-six inches and a distance of approximately six feet and 7.5 inches below each of the sidewall fire sprinklers so that water is delivered

to the collection area at an average density of about 0.15 gallons per minute per square feet" merely recites the ability to so perform. The device of Fischer in view of Tramm discloses the structural limitations of applicant's claimed invention, and therefore, it too has the capability to so perform.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. MPEP 2114.

6. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (4,296,816) in view of Tramm (5,810,263), Pieczykolan (H121), and Bosio et a. (5,727,737).

Fischer discloses a sprinkler comprising: a generally tubular body 30 having a central passageway 31; a frame arms 34, a closure 40, a trigger 44, a deflector 38; a face portion 76; a canopy portion 62. Fischer teaches the use of a deflector 38 shaped and positioned to transform a horizontal flow of water into a spray pattern of droplets dispersed over a generally horizontal, rectangularly-shaped coverage area (see figures 1 and 6). The coverage area may be up to 16 ft x 24 ft (see column 3 lines 55-58).

Fischer discloses, in column 4, lines 33-37, canopy 62 was tested with: channel 90; channel 90 removed; and entire canopy 62 flat. Fischer discloses that with channel 90 cut away along boundary 95, "the sprinkler performed much the same as it did with no channel and an entirely flat confining element."

Fischer differs from what is being claimed in the trigger 44 being a liquid-filled glass bulb and the tubular body having a K factor greater than 9.

Regarding the liquid-filled glass bulb, Bosio teaches, in column 2, lines 38-33, that glass bulb containing heat-expandable liquid and fusible solder element are interchangeable. Pieczykolan teaches a spring washer and bulb design such that thinner walled and faster acting glass bulbs may be employed to ensure quicker release. See Pieczykolan column 3, lines 49-68. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the bulb design of Pieczykolan to ensure quicker release.

Regarding the tubular body having a K factor greater than 9, Tramm discloses, in column 5, lines 12-14, a horizontal-type fire protection sprinkler having a K-factor of at least 3.5, or at least 5.0, or at least 7.0, or at least 10.5, or at least 13.0. Tramm further teaches, in column 5, lines 30-45, the relationship between flow rate and K factor and flow pressure. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the range of K-factors (greater than 9) as taught by Tramm to provide a specific flow rate depending on pressure or to increase flow rate given a specific pressure.

Response to Arguments

7. Applicant's arguments filed February 15, 2008 have been fully considered but they are not persuasive.

Applicant argues that the disclosure as a whole teaches a face portion (planar blank 40) having a single flow opening between arms 52, 54. Applicant's argument is inconsistent with the claimed invention. Claim 67 defines a deflector that includes a

face portion, a canopy portion, and two support arms. Therefore, the two support arms are not elements of the face portion. The only flow openings defined by the face portion are the spaces between the tines on the face portion.

Applicant argues, in the paragraph spanning pages 31 and 32 of the Remarks, that the means plus function recited in claim 64 is enable by the specification, especially at pages 2 and 9-10. As applicant indicates, the specification discloses that the "deflector 40 and frame 11 has been shown to be capable of controlling ordinary hazard fires over rectangular extended coverage areas...and able to deliver a sufficiently uniform distribution of water..." The deflector 40 and frame 11 have the ability to perform such functions. The deflector 40 and frame 11 in themselves cannot perform the functions. Arguably, the sprinkler system requires the deflector plus a properly sized passage 13 and supply pressure capable of providing the proper K-factor to achieve the coverage area.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation can be found in Tramm, column 5, lines 44-56, i.e., to determine flow rates depending on application.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that the prior art does not disclose a canopy where the free end has a linear profile extending the entire length. Fischer discloses, in column 4, lines 33-37, canopy 62 was tested with: channel 90; channel 90 removed; and entire canopy 62 flat. Fischer discloses that with channel 90 cut away along boundary 95, "the sprinkler performed much the same as it did with no channel and an entirely flat confining element."

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571) 272-4905. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Christopher S. Kim/
Primary Examiner, Art Unit 3752

CK